

Amendments to the Specification:

Please add the following new paragraph after the Title and before the first heading "Technical Field" on page 1.

This application is a U.S. National-Phase Application of International Application No. PCT/IT02/00409, filed June 21, 2002.

Please replace the paragraph, beginning at page 1, line 3, with the following rewritten paragraph:

Technical field Field

Please replace the paragraph, beginning at page 1, line 8, with the following rewritten paragraph:

Technological background Background

Please replace the paragraph, beginning at page 2, line 9, with the following rewritten paragraph:

Description-Summary of the invention

Please replace the paragraph, beginning at page 2, line 10, with the following rewritten paragraph:

A principal aim-objective of the present invention is that of providing a control unit for controlling the delivery of a combustible gas, capable of processing the values detected by sensor means for controlling the opening and/or closing of the valve means provided for the delivery of the gas to the burner of the water heater.

Please replace the paragraph, beginning at page 2, line 14, with the following rewritten paragraph:

This aim-objective and others which will become clear from the following description, are fulfilled by a control unit for controlling the delivery of combustible gas in valve units having the characteristics defined in the claims which follow.

Please add the following new paragraph after the paragraph ending on line 16 of page 2.

The control unit controls the delivery of a combustible gas in a valve unit of the type having valve means for shutting off the gas which is subject to the operational control of a magnetic safety unit having a thermocouple. The control unit includes an electronic circuit assembly arranged for connection to sensor means adapted to detect the presence of inflammable vapours or other dangerous substances. The circuit assembly is supplied by electric power generating means. And the circuit assembly has an electronic type switch acting on the electric circuit for supplying the magnetic safety unit so as to interrupt the circuit and operate the valve means for closure in the presence of inflammable vapours detected by the sensor means.

Please replace the paragraph, beginning at page 2, line 17, with the following rewritten paragraph:

Brief description-Description of the drawingsDrawings

Please replace the paragraph, beginning at page 2, line 22, with the following rewritten paragraph:

[—]Figure 1 is a block diagram relating to a control unit for a valve group according to the invention,

Please replace the paragraph, beginning at page 2, line 24, with the following rewritten paragraph:

[—]Figure 2 is a diagram corresponding to that of the previous figure in an alternative embodiment of the invention,

Please replace the paragraph, beginning at page 2, line 26, with the following rewritten paragraph:

[—]Figure 3 is a diagrammatic view of a control circuit of the valve unit of the previous figures, interfaced with the control unit according to the invention,

Please replace the paragraph, beginning at page 2, line 28, with the following rewritten paragraph:

[—]Figure 4 is a diagrammatic view corresponding to that of figure 3 in a further variant of the invention.

Please replace the paragraph, beginning at page 2, line 30, with the following rewritten paragraph:

Preferred Embodiment method of implementation of the inventionInvention

Please replace the paragraph, beginning at page 3, line 6, with the following rewritten paragraph:

The valve unit 2 comprises, in the pipe 3, a safety valve 4 operated by a manually set magnetic unit 5, of conventional structure per se, adapted to allow the opening of the valve and the flow of gas in the pipe 3.

Please replace the paragraph, beginning at page 3, line 23, with the following rewritten paragraph:

The control unit comprises ~~according to the invention~~, an electronic circuit assembly 12, produced for example in the form of an electronic card, which is interfaced with the valve unit 2 on the one hand, and with a sensor means 13 for sensing inflammable vapours on the other hand, as will become clearer from the continuation of the description.

Please replace the paragraph, beginning at page 3, line 28, with the following rewritten paragraph:

The sensor 13 is conveniently of the type comprising transducer means capable of transforming the signal indicating the presence of inflammable vapours in the surrounding atmosphere, into an electrical magnitude which is sent, as an input signal, to the electronic circuit assembly 12. Such a magnitude is for example an ohmic resistance R, but other magnitudes may be generated by different transducer means that may be employed.

Please replace the paragraph, beginning at page 4, line 8, with the following rewritten paragraph:

The circuit assembly 12 further comprises an electronic type switch 14, for example with MOSFET type transistor, which is operably connected to the electric circuit 11 of the thermocouple 10 for interrupting said the circuit and, consequently, operating the safety valve 4 so as to shut off the gas pipe 3 when the switch 14 is operated by the signal S generated by the electronic circuit assembly.

Please replace the paragraph, beginning at page 4, line 17, with the following rewritten paragraph:

The electronic circuit assembly 12, in the interface with the sensor 13, is electrically supplied by thermopile power generating means 12a, which are heated by the flame of the pilot burner 7. Said-The thermopile means 12a serve to generate an electrical voltage of the order of at least a few tenths of a volt, necessary for supplying the electronic circuit 12.

Please replace the paragraph, beginning at page 4, line 22, with the following rewritten paragraph:

The control unit 1 also comprises battery electric power generating means 15, which are arranged to supply electric power principally to the circuit assembly 12, limitedly in the initial phase of lighting the flame at the pilot burner, in which phase the thermopile means 12a are not yet capable of providing sufficient power to the circuit assembly 12. The use of thermopile generating means advantageously makes it possible to increase the useful duration of the charge of the battery 15.